

What is claimed is:

1. An interpositional arthroplasty implant adapted to be retained in position in apposition to a joint surface, at least in part, by surrounding healthy tissue.
2. An implant according to claim 1 wherein the implant comprises a knee  
5 implant and includes one or more structural features adapted to be fixedly positioned within and/or in apposition to the natural meniscus, in a manner that permits the implant to be retained by the meniscus in a manner that further improves the retention of the implant itself upon the tibial surface.
3. An implant according to claim 1 wherein the implant comprises a  
10 polymeric component comprising a first major surface adapted to be positioned upon and congruent with the tibial surface of the knee, and a second major surface adapted to be positioned against the femoral condyle of the knee.
4. An implant according to claim 3 wherein the implant includes a relief defining a cavity extending below the second major surface.
- 15 5. An implant according to claim 4 wherein the cavity extends along at least a portion of a circumference of the implant, and is adapted to be retained within the meniscal tissue of a knee.
6. An implant according to claim 2 wherein the implant is selected from the group consisting of medial implants and lateral implants.
- 20 7. An implant in accordance with claim 3 wherein the implant comprises a biomaterial.
8. An implant in accordance with claim 7 wherein the biomaterial comprises a polyurethane.
9. An implant according to claim 8 wherein the polyurethane is  
25 biocompatible with respect to cytotoxicity, sensitization, genotoxicity, chronic toxicity, and carcinogenicity.
10. An implant according to claim 9 wherein polyurethane has a Shore hardness of at least about 60 D or less.
11. A kit for a positional arthroplasty system, the kit comprising:  
30 a) an implant that provides a major surface adapted to be positioned against a femoral condyle and a second major surface adapted to be positioned against a tibial plateau, and

b) one or more devices adapted to perform one or more steps selected from the group consisting of preparing the joint to receive an implant, determining an appropriate implant size for a particular joint, inserting the implant into the joint, and/or securing the implant to a desired extent.

5           12.    A kit according to claim 11 wherein the kit includes a includes an femoral smoother.

          13.    A kit according to claim 12 wherein the femoral smoother is universal in its orientation.

          14.    A kit according to claim 12 wherein the femoral smoother is  
10   fenestrated.

          15.    A kit according to claim 11 wherein the kit includes one or more trial implants.

          16.    A method of repairing a knee joint, comprising the steps of providing and implanting an implant according to claim 1.

15           17.    A knee joint that includes an implant according to claim 1.

          18.    A kit comprising a tool useful for preparing a joint to receive an implant, an apparatus useful for determining an appropriate implant size for the joint, an apparatus useful for determining an appropriate implant thickness, and a tool  
20   useful for inserting the implant into the joint and/or securing the implant to a desired extent.

          21.    An implant according to claim 1 wherein the implant comprises a composite or monolith structure fabricated from a biocompatible, biodurable material that is adapted to be inserted into the joint compartment.

          22.    An implant according to claim 21 wherein the implant is substantially  
25   free of anchoring portions that need to be attached to the bone, cartilage, ligaments or other tissue, yet by its design is capable of being used with minimal translation, rotation, or other undesired movement or dislocation within or from the joint space.

          23.    An implant according to claim 22 wherein stability of the implant within the joint space is provided by the fixation/congruency of the device to the one  
30   or the other of the two joint members.